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Background: To our knowledge KFAFH cardiac department is one of the few centers performing aortic arch surgery in Saudi Arabia. The optimal strategy for management of the circulation during aortic arch surgery remains controversial and neurologic dysfunction due to cerebral ischemia remains a significant concern. We report our early experience on aortic arch surgery performed with Deep or Moderate Hypothermic Circulatory Arrest (DHCA or MHCA) and Antegrade Selective brain Perfusion (SAP).

Patients and methods: 14 consecutive patients (pts) underwent aortic arch repair between 2008 and 2012. 4 pts were operated on emergency basis because of type A aortic dissection or impending rupture, 10 pts on elective basis. 5 pts (35.7%) had complete arch replacement and 9 pts (64.3%) had emiarch repair. Axillary cannulation was performed in 12 pts (85.7%), femoral cannulation in 2 pts (14.3%). Our brain protection strategy consisted in DHCA (18–20 C) in 11 pts (78.6%), MHCA (23–25 C) in 3 pts (21.4%). Selective monolateral antegrade perfusion (uSAP) trough axillary artery was performed in 12 pts (85.7%), selective bilateral antegrade perfusion (bSAP) in 2 pts (14.3%). Mean circulatory arrest was 29 ± 15 min, Cerebral oximetry has been employed to monitoring brain perfusion.

Results: In-hospital mortality rate was 0, no pt had permanent neurological deficit. 1 pts (7.1%) had a temporary neurological deficit, 2 pts renal impairment (21.4%), 1 pt vocal cord paralysis (7.1%), 3 pts bleeding (21.4%). Temperature was not identified as independent predictor of transient neurological deficit (p 0.5). MHCA was significantly associated to reduced blood loss after surgery ($p < 0.01$). Mean follow-up (22 months): no pt died, 1 pt presented aortic pseudoaneurysm 6 months after surgery (Marfan syndrome with aortic dissection).

Conclusion: Early KFAFH experience on aortic arch surgery has been performed with very good outcome. HCA arrest with SAP represents a very effective technique of brain protection. For short circulatory arrest time MHCA is safe and can reduce coagulopathy problems related to DHCA.

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Monitoring of antiaggregation therapy effectivity inpatients with acute stemi: Is it really necessary in clinicalpractice?

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Introduction: Antiaggregation therapy is the keystone of acute ST elevation myocardial infarction (STEMI) drug treatment; but effectivity of this therapy is not always sufficient. The aim of the study was to determine wheather laboratory monitoring of antiaggregation therapy helps to improve the management of patients with acute STEMI.

Material and methods: A pilot prospective study in patients with acute STEMI treated with direct percutaneous coronary intervention (dPCI) of culprit lession. Optic aggregometry was chosen to assess the effectivity of antiaggregation treatment. Samples were taken prior to coronarography (sample 1) as well as at first day after diagnostic procedure (sample 2). MACE (in-stent trombosis, heart failure, in hospital death, all cases mortality, ventricular arrhytmia, needs of repeat revascularization) were sequently monitored. Study group included 22 patients (average age 66 years, 11 men, 11 women), from whom 14 had recieved clopidogrel loding dose and 8 had recieved prasugrel loding dose.

Results: In clopidogrel group 11 patients did not reach effective drug activity in first sample and 3 patients did not reach effective drug activity in second sample. While in prasugrel group ineffective antiaggregation was seen just in 1 patient in first sample. In patients with clopidogrel treatment more MACE developed in followed period (13 vs. 6).

Conclusion: Our results show that optic aggregometry seems to be a usefull laboratory method for antiaggregation drugs effectivity assessment. Prasugrel treatment seems to be more effective than clopidogrel administration in patients with acute STEMI and dPCI of culprit lession.

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Effectiveness of intraarterial nitrate for transradial coronary angiography

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Background: Transradial access is a well established approach for coronary angiography and percutaneous coronary intervention. However a major pitfall is radial artery vasospasm, for which several pharmacological agents are being considered. We have used 100 microgram intra-arterial glycerine trinitrate (GTN) only to counter this problem.

Method: A study was done in Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh and Apollo Hospital, Hyderabad, India from January 2102 to June 2012. Total 80 patients (40 patient in GTN group and 40 patients in GTN + Diltiazem group) were included for CAG ± PCI. Patients were randomized into 2 groups to compare intraarterial GTN and a combination of GTN+Diltiazem. Radial artery spasm and patient comfort were assessed in both groups.

Results: Radial artery spasm leading to femoral access was statistically insignificant comparing both groups. None of the patients in GTN group had pain or burning sensation during administration, whereas the cocktail group (GTN + Diltiazem) had some discomfort

in the form of pain and burning sensation despite aspirating blood and thorough mixture of blood with GTN and Deltiazem. Radial artery spasm rate was almost similar in both group (2 vs 1 out of 40 in each group respectively). Total procedure time from vascular access to sheath removal was almost similar in both groups (15.41 ± 1.3 min vs 14.85 ± 1.6 min) and total fluoroscopy time in GTN group was 3.1 ± 1.6 min and in GTN with diltiazem group was 2.9 ± 4.6 min.

Conclusion: Intraarterial GTN alone is a safe and equally effective arterial dilator for transradial coronary angiography compared to combined GTN and diltiazem.

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ST Elevation myocardial infarction in young adults: Prevalence, demographics, risk factor profile and early outcome after primary percutaneous coronary intervention

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Objectives: We sought to investigate prevalence, clinical profile,in-hospital and long term clinical outcomes of Primary Percutaneous Coronary Intervention in young adults presenting with Acute MI.

Methods: Total of 95 patients ⩽40 years were enrolled in retrospective data analysis.Prevalence,risk factor profile and demographics were analyzed. Procedural success,in-hospital and short-term (1 month) outcomes were assessed as primary end points.Secondary end-points were recurrent MI and new revascularization.

Results: Mean age was 36 ± 14 years (range 19–40); 97% males and 3% females. 59(62%) patients presented with anterior wall MI, 36(38%) with inferolateral wall MI; 5% had infarction in other territories. 51% patients were Saudis and 49% were non Saudis.Risk factor profile revealed-Smoking (76%), Diabetes Mellitus (22%), Hypertension (20%), Dyslipidemia (12%), Family History (12%). 3 patients had cardiogenic shock at presentation. All underwent PPCI, with door to balloon time of 83 ± 05 min (74–220 min). Majority had SVD (47%). 2VD and 3VD was seen in 33% and 18% respectively. (Infarct related artery: LAD 54%, RCA 23%, LCX 12% and Left Main Disease 2%). DES was deployed in 89%. Successful recanalisation of IRA was achieved in 95% with 87% achieving TIMI III flow. No reflow occurred in 2%. Procedure related coronary artery dissection occurred in 1 patient. 6% developed Ventricular Tachycardia, 2 patients developed complete heart block. In-hospital mortality was 3%. 1 patient had acute stent thrombosis and 4 patients presented with subacute and late stent thrombosis on follow up. All patients were alive at one-month follow up.

Conclusions: Our data reveal that younger patients, predominantly males comprise a significant proportion of patients of STEMI. Smoking appears to be a prominent risk factor. Such patients have a favorable outcome after Primary PCI. High incidence of stent thrombosis in our cohort of patients needs further assessment.

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Tailored management approach for critically sick children and late presenters with congenital heart disease

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Background and objectives: Re-conditioning before cardiac surgery in critically sick children is often needed. We report our experience using tailored management approach in these patients.

Methods and patients: The charts of patients with CHD who judged to have high operative risk were reviewed. Included were patients with: large left to right shunt and ventilation for longer than 2 months, significant left to right shunts at multiple levels combined with malnutrition or recent infection, severely impaired cardiac function needing inotropic support and antifailure medications, recent.

RSV infection, severe malnutrition (body weight <5th centile), and critically sick patients during early postoperative course. Excluded were patients with: significant left to right shunts, presented early, with minor growth retardation, and without recent active infection.

Results: Six patients were included. The median age was 13 months (2–48 months) and median weight was 4.6 kg (2.3–12.6 kg). Two patients had multiple left to right shunts and ventilator dependency. One with huge VSD presented at four years of age. Another with low body weight, large VSD and impaired LV function.Two more with early postoperative complications and ventilator dependency.

In the first category, staged approach was essential. This was done by transcatheter closure of the PDA, followed by pulmonary artery banding. This approach lead to extubation. After proper nutrition, total correction was done.The patient who presented at four years of age underwent banding of PA, later surgical repair of VSD. Because of long postoperative ICU stay, he needed percutaneous closure of his residual VSD and then discharged. The patient with large muscular VSD and impaired LV function underwent percutaneous VSD closure with good result despite low weight (4.2 kg).The last two patients; one needed balloon dilation of residual coarctation, the other because of severe obstruction to his bilateral Glenn anastomosis, underwent stenting of these stenosis. Both had good result.

Conclusions: In severely sick children and late presenter with multiple shunts, a tailored management